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How the Emerging U.S. Retirement System Magnifies Wealth Inequality

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Wealth inequality and financial inclusion have long been hot topics in international economic development. They now have taken center stage in the U.S. presidential primary debates. As more analysts probe this phenomenon in various policy areas, they may find that America's continuing shift to a "defined contribution" (DC) retirement system is playing a role in increasing the concentration of wealth.

Though the DC system has many merits, it currently creates significant barriers to entry into the retirement system for many people at the lower end of the economic spectrum and those entering the workforce. About one-third of Americans report having no retirement savings at all.¹ More than half of households with DC accounts have very little in them. Among households with DC savings, the median balance in 2013 was \$4,700 for those in the lowest quartile by net worth. The median balance was \$12,100 for those in the next quartile, almost 40 times less than the median balance for those in the top 10%. A similar pattern can be seen comparing balances by family income (Table 1).

People higher on the economic scale are more likely to have access to a retirement plan at work, which contributes to the difference in account balances between those at the top and the bottom. People with low incomes who want to start an Individual Retirement Account (IRA) outside the workplace face barriers including minimum account balance requirements and high fees.

People with higher income tend to put more money into their retirement accounts, so they start from a larger base. By granting tax-favored status to retirement contributions, U.S. policy widens this base somewhat more as people's tax rates rise. The more one makes, the bigger the tax break.

One of the most powerful drivers of the widening gap between balances over time is how individuals invest their DC savings. Greater tolerance for investment risk can mean much higher return. Stocks compared

to bonds and cash, for example, tend to generate significantly higher returns over long periods of time, though greater fluctuations can make them riskier in the short run. So it stands to reason that young people should put a greater percentage of funds in their retirement accounts in stocks because they have an investment time window of many decades. But data show they tend to do otherwise. As seen in Table 2, 401(k) participants in their 20s are more likely to invest none of their money in stocks compared with older workers. People with lower incomes tend to be similarly risk averse.

Table 1. Median Combined IRA, Defined Contribution Retirement Plan Balance for Families with Such Accounts, 2010 and 2013

	2010	2013
Total	\$47,155	\$59,000
Family Income		
\$10,000-\$24,999	\$12,860	\$10,300
\$25,000-\$49,999	\$18,219	\$18,000
\$50,000-\$99,999	\$34,294	\$45,000
\$100,000 or more	\$168,257	\$171,000
Age of Head of Household		
35-44	\$33,223	\$42,700
45-54	\$64,302	\$87,000
55-64	\$107,170	\$104,000
65 or older	\$76,091	\$118,000
Net Worth Percentile		
Bottom 25%	\$5,359	\$4,700
25-49.9%	\$12,806	\$12,100
50-74.9%	\$43,940	\$52,000
75-89.9%	\$144,680	\$165,000
Top 10%	\$442,612	\$450,000

Note. Income and asset values are in 2013 dollars. For families with incomes less than \$10,000, sample size was not sufficient for reliable estimates. Source: Employee Benefit Research Institute (EBRI) estimated of 2010 and 2013 Survey of Consumer Finances



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Table 2. Asset Allocation Distribution of 401(k) Participant Account Balance to Equity Funds, by Participant Age, Tenure, or Salary (percentage of participants, 2012)

	Percentage of Account Balance Invested in Equity Funds			
	Zero	1%-20%	>20%-80%	>80%
All	51.2%	6.2%	27.4%	15.0%
Age Groups				
20s	68.8%	2.9%	17.1%	11.2%
30s	53.0%	5.0%	26.0%	15.9%
40s	46.2%	6.1%	30.2%	17.5%
50s	46.2%	7.7%	31.6%	14.6%
60s	51.1%	8.4%	28.0%	12.5%
Tenure (years)				
0-20s	66.7%	2.7%	19.0%	11.6%
>2-5	59.5%	4.2%	23.0%	13.3%
>5-10	50.2%	6.1%	28.6%	15.2%
>10-20	40.5%	8.1%	33.9%	17.5%
>20-30	37.4%	10.6%	35.6%	16.4%
>30	41.0%	12.1%	33.0%	14.0%
Salary				
>\$20,000-\$40,000	61.3%	5.4%	23.2%	10.2%
>\$40,000-\$60,000	51.4%	7.5%	29.3%	11.8%
>\$60,000-\$80,000	44.3%	8.5%	33.9%	13.3%
>\$80,000-\$100,000	38.6%	9.3%	37.9%	14.1%
>\$100,000	30.8%	10.1%	43.0%	16.2%

Note. Row percentages may not add up to 100% because of rounding. "Equity funds" include mutual funds, bank collective trusts, life insurance separate accounts, and any pooled investment product primarily invested in equities. The tenure variable is generally years working at current employer, and thus may overstate years of participation in the 401(k) plan. Adapted from EBRI/ICI Participant-Directed Retirement Plan Data Collection Project

People on tight budgets or who are starting out in the work force may have relatively less tolerance for investment risk because they have little capital that they can afford to lose. By necessity, they may perceive a high likelihood of drawing on funds available for retirement savings for more immediate purposes arising in the event of a job loss, the need for pay for education, or the need to make an alternative investment, such as a down payment on a house. This is only common sense, but differences in long-term rates of return can greatly magnify or diminish retirement account balances over time.

Table 3 compares balances begun by setting aside 10% of the income of a worker making \$10,000 a year with the same percentage set aside from the salary of a worker making \$100,000. It illustrates how different levels of risk tolerance can widen the

gap between levels of wealth. In this example, the lower paid person is assumed to have a 10% tax rate and the higher paid worker a 30% tax rate, and they are assumed to rechannel half their respective tax savings back into their retirement funds. Using this assumption, the tax break increases the original differential between account balances a little, moving it from 10-1 to 11-1.

As long as the two accounts earn the same return on investment (ROI), the proportional difference between balances will remain at 11-1 over time. But differences in ROI can dramatically change the balance differential. For example, if the higher income worker invests in a fund that averages 10% ROI annually and the lower paid worker's account makes 5%, balance differentials generated from the original investment will increase from 11 times to 28 times after 20 years, 44 times after 30 years, 70 times after 40 years, and to 112 times after 50 years (Table 3). Balance differentials are far greater if the lower paid worker's account makes only 3%, rising to 152 times after 40 years and to 293 times after 50 years.

The *myRA* accounts now being organized by the federal government for people that do not have access to retirement plans channel invested money into derivatives of government issued bonds guaranteeing a ROI near the rate of inflation. Though *myRAs* may serve a valuable purpose in giving young people a way to accumulate seed capital in a stable environment, they are a questionable choice of long-term investment for people in this age group because of the very low ROI. Something like a *myRA*, however, could make more sense for the very old living primarily on fixed incomes seeking to protect small accounts from inflation and sudden market fluctuations, especially if it could deliver a somewhat higher yield.

If the risk taking behavior is reversed in Table 3, the wealth gap closes. If the higher paid person puts \$11,500 in a conservative fund earning 5% and the lower paid person puts \$1,050 in a higher risk fund that averages 10% ROI, then the 11-1 differential diminishes to just over 4-1 in 20 years and to almost 3-1 in 30 years. The wealth gap virtually disappears after 50 years.

Investment risk tolerance involves the relationship between what a person has in assets compared to what he or she can afford to lose. In preparing a 2014 report for the Society of Actuaries' "Managing the Impact of Long-Term Care Needs and Expense of Retirement Security Monograph,"² I developed the

Table 3. Growth of Retirement Funds Invested by Low- and Higher-Wage Workers, Compared at Different Rates of Return

		Amount Invested	Growth in Balance				ROI
Income	Tax Rate	10% of salary plus half of tax savings	20 years	30 years	40 years	50 years	
\$10,000	10%	\$1,050	\$2,786	\$4,538	\$7,392	\$12,041	at 5% ROI
			\$7,064	\$18,322	\$47,522	\$123,260	at 10% ROI
\$100,000	30%	\$11,500	\$30,513	\$49,702	\$80,960	\$131,875	at 5% ROI
			\$77,366	\$200,668	\$520,481	\$1,349,995	at 10% ROI
How Many Times Greater is One Account Balance Than the Others? (10 = 10 times)							
10 times		11 times	11	11	11	11	at 5% ROI
(before tax break effect)			11	11	11	11	at 10% ROI
			28	44	70	112	\$10K earner at 5%, \$100K earner at 10%
			41	79	152	293	\$10K earner at 3%, \$100K earner at 10%
			4.3	2.7	1.7	1.1	\$10K at 10%, \$100K at 5%

following equation to illustrate how retirees' need for funds to meet the basic expenses of living may constrain their ability to tolerate investment risk.

$$\text{Relative Investment Risk} = \frac{\text{What I need}}{\text{What I have} - \$\$ \text{ Risked}}$$

Or, when the underlying concept is expanded:

$$\text{Relative Investment Risk} = \frac{\text{Expenses Exceeding Secure Income} * \text{Expected Years of Life}}{\text{Investable Asset} - \text{Maximum Potential Loss of } \$\$ \text{ Invested}}$$

Figures 1 and 2 use this equation to illustrate the variance in investment risk tolerance for retirees deciding how to invest funds in a retirement

account. Scale is arbitrary and for visual purposes only. In this model, the more that expenses exceed secure income such as Social Security (the numerator), the greater the risk. The greater the difference between total investable assets and total potential losses (the denominator), the less the risk. The more years of expected life, the greater the risk.

The DC retirement system magnifies wealth inequality through differences in individual risk tolerance. This contrasts with the disappearing defined benefit system, in which fiduciaries and institutional investors³ manage pooled assets on behalf of all plan participants.⁴ It also differs fundamentally from the Social Security program, which is somewhat progressive⁵ in structure.⁶

Figure 1. Retiree's Relative Investment Risk: The Higher the Value, the Greater the Perceived Risk (\$100K investment, 25 years of expected life)

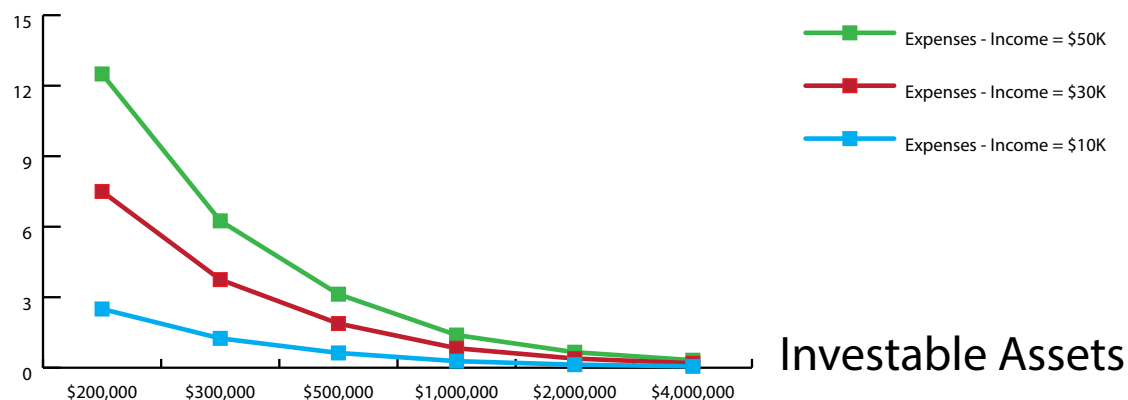
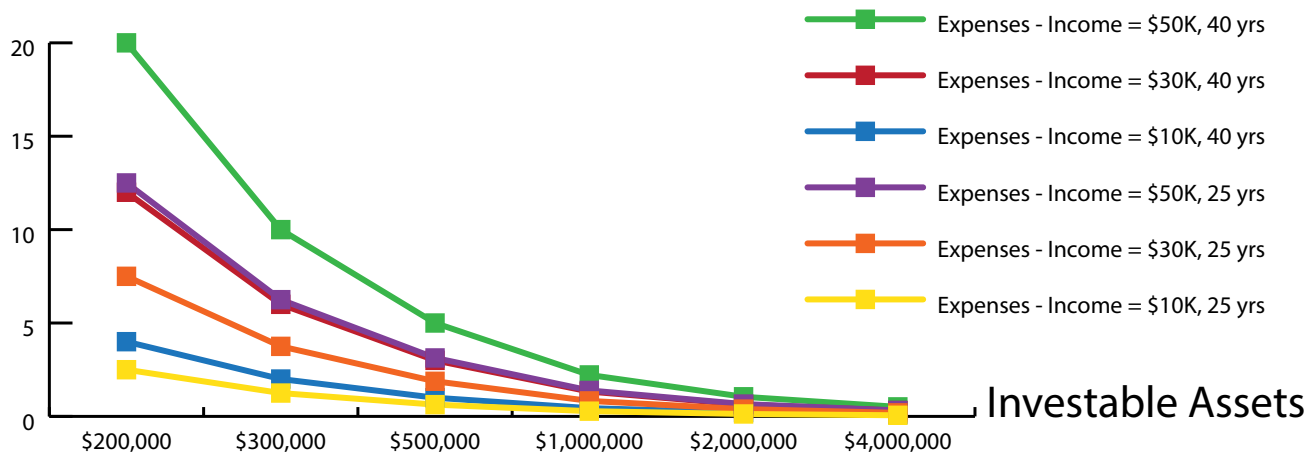


Figure 1. Retiree's Relative Investment Risk: The Higher the Value, the Greater the Perceived Risk (\$100K investment, 25 and 40 years of expected life)



The DC retirement system's tendency to concentrate wealth parallels the rising income and wealth inequality in the United States, which has been documented by economists including Joseph Stiglitz,⁷ Thomas Piketty,⁸ Emmanuel Saez,⁹ and others, as well as recent U.S. Federal Reserve survey data.¹⁰ In "Capital in the Twenty-First Century," Piketty makes the case that if the rate of return on capital is greater than the growth rate of a nation's economy, wealth concentrates at the top of the economic spectrum.¹¹ This phenomenon has recently raised concerns. Without shifts in policy, greater concentration of wealth could lead to a smaller middle class; higher levels of poverty; greater pressure for spending to meet the needs of the elderly, disabled, and poor; constrained aggregate demand for goods and services; and less capacity to raise tax revenue.

In theory, the DC system, pinioned on a base of Social Security, could offer all workers an opportunity to share in the benefits of a free-market economy. However, major changes are required for this to become reality. These include getting all Americans started in the retirement system at an early age and invested in options that provide the best long-term chance of financial security.

In the United States, many ideas have been advanced to help reduce wealth inequality that could be applied to the DC system. The Urban Institute, for example, recently included "establishing automatic savings in retirement plans" and "matched savings such as universal children's savings accounts" in a list "promising policies to shrink wealth inequality and racial wealth gaps."¹² Other proposals in the United States include setting

up automatic IRAs;¹³ setting up and funding "seed accounts" for newborns;¹⁴ and setting up and funding "starter IRAs" while providing hands-on financial education for teenagers to prepare them to navigate the DC retirement system.¹⁵

Some states and cities are experimenting with universal accounts geared at saving for college and promoting long-term financial inclusion. In Oklahoma's "SEED OK" experiment, accounts were opened automatically for every child in a treatment group. The experiment included both making a small initial deposit and holding it in state 529 college savings accounts and providing financial education. Versions of this type of approach have been implemented in Singapore, Canada, Korea, the United Kingdom as well as in Maine, Nevada, Connecticut, and Rhode Island. In the Oklahoma program, initial deposits grew by more than 40% over seven years, despite initial losses during the Great Recession, according to a recently published evaluation.¹⁶ It is also interesting to note that the experiment encountered virtually no resistance; only one family offered an account for a child chose not to participate.

Other countries offer models for universal savings and retirement systems. Great Britain, for example, successfully established automatic savings accounts for children (though government funding for these has been cut due to fiscal austerity).¹⁷ Australia's "superannuation" system requires employers to contribute a percentage of employees' income into diversified retirement funds managed by trustees.¹⁸ By 1999, 97% of Australia's full-time employees and 76% of part-time employees were covered by the superannuation system. Over the years, Australia has increased required contributions and continued

to refine the system, which has been credited with raising levels of capital accumulation and improving retirement security.¹⁹

Endnotes

1. See Helman, R., et al. (2015). The 2015 retirement confidence survey: Having a retirement savings plan a key factor in Americans' retirement confidence. Employee Benefit Research Institute. Retrieved from https://www.ebri.org/pdf/briefspdf/EBRI_IB_413_Apr15_RCS-2015.pdf.

2. See Polzer, K. (2014). Financing future LTSS and long life through more flexible 401(k)s and IRAs. Society of Actuaries. Available from <https://www.soa.org/Library/Monographs/Retirement-Systems/managing-impact-ltc/2014/mono-2014-managing-ltc.aspx>.

3. See Munnell, A. H., Soto, M., Libby, J., & Prinzivalli, J. (2006). Investment returns: Defined benefit vs. 401(k) Plans, Center for Retirement Research. Retrieved from http://crr.bc.edu/wp-content/uploads/2006/09/ib_52-508.pdf.

4. The defined benefit system, however, has issues of its own. For example, most workers do not have access to these traditional pension plans. Vesting periods and benefit formulas can create major barriers for workers changing jobs frequently.

5. Debate continues over whether Social Security is more progressive or regressive in structure (i.e., whether the program tends to redistribute funds from the wealthier to the poorer, or vice versa). Progressive characteristics include that Social Security benefits are distributed in a narrower range than individual incomes and asset levels in general. Regressive characteristics include that, unlike the income tax, Social Security tax rates are not adjusted by income and Social Security taxes are not levied on income exceeding a set amount.

6. An argument can be advanced that anticipated income from Social Security, which is indexed to keep up with the cost of living, complements the DC system in that its presence allows individuals to take more investment risk. Furthermore, the barriers to entry, risks and inequity inherent in the DC system could lead policymakers to consider bolstering Social Security benefits for those at the lower end of the economic spectrum (rather than trying to displace Social Security benefits with private accounts, as has been debated in the past).

7. See Stiglitz, J. (2013). *The price of inequality*. New York, NY: W.W. Norton & Company.

8. See Piketty, T. (2014). *Capital in The Twenty-First Century*. Cambridge, MA & London, UK: The Belknap Press of Harvard University Press.

9. See Saez, E., & Zucman, G. (2014, October). Wealth inequality in the United States since 1913. Retrieved from <http://gabriel-zucman.eu/files/SaezZucman2014Slides.pdf> with author's permission.

10. See Bricker, J. et al. (2014). Changes in U.S. family finances from 2010 to 2013: Evidence from the Survey of Consumer Finances. Federal Reserve Bulletin. Retrieved from <http://www.federalreserve.gov/pubs/bulletin/2014/pdf/scf14.pdf>. The survey is done every three years.

11. To gain insight into unequal returns on capital investment, Piketty examined the performance of university endowments in the United States and found that return increases rapidly with the size of endowment. Portfolios of all sizes were highly diversified. However, the larger endowments were far more likely to use "alternative investment strategies," including higher-yield strategies such as including shares in private equity funds, unlisted foreign stocks, hedge funds, derivatives, real estate and raw materials, and other relatively high-risk options. He notes that these kinds of investments require sophisticated expert advice that is costly and may not be available to smaller portfolio managers. (See, "Capital in the Twenty-First Century," pp. 447-451.)

Building on Piketty's insight into possible mechanisms driving wealth divergence over time, this paper suggests that lower risk tolerance may result not only from inability to afford the best investment advice. Lower risk tolerance can also result from the relationship between what the investor needs to survive and what he/she is prepared to risk.

12. See Urban Institute. (2015). Nine charts about wealth inequality in America. Urban Institute. Retrieved from <http://datatools.urban.org/Features/wealth-inequality-charts/>.

13. See John, D. C., (2012, April 17). Pursuing universal retirement security through automatic IRAs and account simplification. Testimony before The Committee on Ways and Means, U.S. House of Representatives. The Heritage Foundation. Retrieved from <http://www.heritage.org/research/>

testimony/2012/04/pursuing-universal-retirement-security-through-automatic-iras-and-account-simplification.

14. See “Congressman Crowley announces plan to create a savings and investment program for American families,” March 4, 2014. Retrieved from <http://crowley.house.gov/press-release/congressman-crowley-announces-plan-create-savings-and-investment-program-american>.

15. See Polzer, K. (2015). A Modest Proposal: Create a Universal Retirement Platform including Starter IRAs. Center on Capital & Social Equity. Retrieved from <http://polzercapital.com/#Include>.

16. See Beverly, S., Clancy, M., Huang, J., & Sherraden, M. (2015). The SEED for Oklahoma Kids Child Development Account experiment: Accounts, assets, earnings, and savings. Center for Social Development. Washington University in St. Louis. Retrieved from <http://csd.wustl.edu/Publications/Pages/displayresultitem.aspx?ID1=1275>.

17. See Zichawo, W., Farber, C., & Mensah, L. (2014). Child trust funds: Renewing the debate for long-term savings policies. The Aspen Institute. Retrieved from <http://www.aspeninstitute.org/sites/default/files/content/docs/pubs/Child-Trust-Funds-Renewing-the-Debate-for-Long-Term-Savings.pdf>.

18. See Drew, M. E., & Stanford, J. (2003). A review of Australia’s compulsory Superannuation scheme after a decade. Queensland University. Retrieved from <http://www.uq.edu.au/economics/abstract/322.pdf>.

19. See Summers, N. (2013, May 30). In Australia, retirement saving done right. Bloomberg Business. Retrieved from <http://www.bloomberg.com/bw/articles/2013-05-30/in-australia-retirement-saving-done-right>.

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